I claim:

1. A tank agitator for connecting onto the terminus of a generally steady flow, low head feedwater line and causing agitation in the tank by the discharge of the feedwater through a rotating discharge port, comprising:

a housing having an inlet for connection to the feedwater line and defining a turbine plenum and an exhaust plenum,

a turbine mounted in the turbine plenum and driven to spin by the flowthrough of the feedwater and exhausting to the exhaust plenum,

a hollow drive shaft driven to spin by the turbine and extending partially within the exhaust plenum and through a seal in the housing to terminate outside the housing, wherein the hollow drive shaft is formed with an aperture that allows water in the exhaust plenum to flow into the lumen of the shaft; and,

a nozzle on the shaft defining a discharge port angled off the axis of the lumen such that the discharge stream issuing therefrom sweeps in circles with the spinning of the drive shaft.

2. A tank agitator for connecting onto the terminus of a generally steady flow, low head feedwater line and causing agitation in the tank by the discharge of the feedwater

through a discharge port in which the discharge stream pulses between alternating phases of flow and quiescence, comprising:

a housing having an inlet for connection to the feedwater line and defining a turbine plenum and an exhaust conduit extending between an opening to the turbine plenum and a port in the housing to the outside;

a turbine mounted in the turbine plenum and driven to spin by the flowthrough of the feedwater and exhausting to the exhaust plenum,

a blocker door coupled to and driven by the spinning turbine to cycle between uncovering and covering one of the exhaust opening and the discharge port whereby the discharge stream issuing from the discharge port pulses between alternating phases of flow and quiescence.

3. A tank agitator for connecting onto the terminus of a generally steady flow, low head feedwater line and causing agitation in the tank by the discharge of the feedwater through a discharge port that oscillates back and forth between angular extremes, comprising:

a housing having an inlet for connection to the feedwater line and defining a turbine plenum and an exhaust plenum,

a turbine mounted in the turbine plenum and driven to spin by the flowthrough of the feedwater and exhausting to the exhaust plenum,

a hollow drive shaft mounted to oscillate and extending partially within the exhaust plenum and through a seal in the housing to terminate outside the housing, wherein the hollow drive shaft is formed with an aperture that allows water in the exhaust plenum to flow into the lumen of the shaft;

a nozzle on the shaft defining a discharge port angled off the axis of the lumen such that the discharge stream issuing therefrom sweeps in arcs with the oscillation of the drive shaft; and,

a drive train including a drag link interconnecting the spinning turbine with the oscillating drive shaft such that the spinning input of the turbine is converted into an oscillating output in the drive shaft.